

3 (a) Fig. 3.1 shows the percentage of water in different structures of the human body.

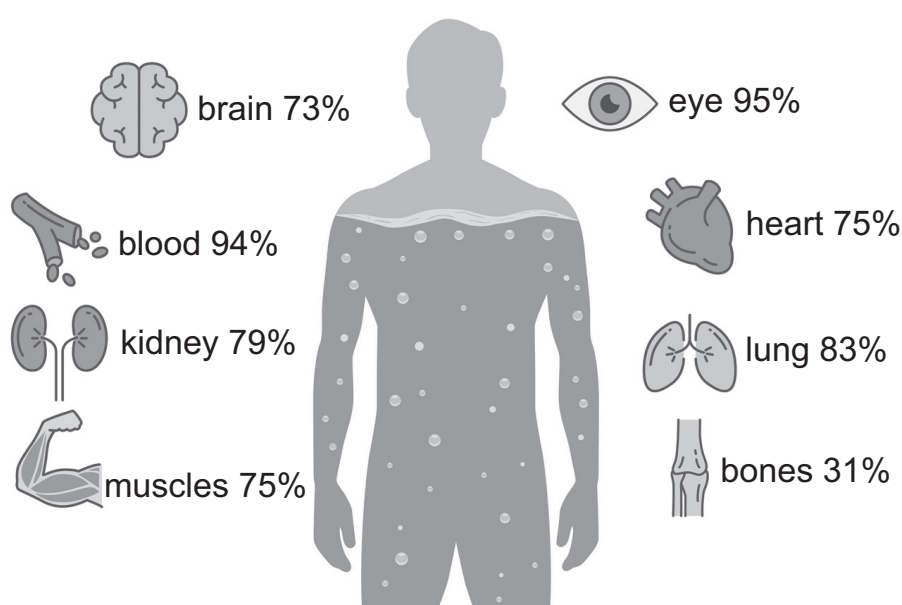


Fig. 3.1

(i) The mean mass of a human eye is 28 g.

Using information from Fig. 3.1, calculate the mass of water in a human eye.

Give your answer to **two** significant figures.

..... g
[2]

(ii) Describe the importance of water in the human body.

.....

 [3]

(b) Cholera is a disease caused by a pathogen in contaminated water.

Fig. 3.2 is a diagram of the cholera pathogen.

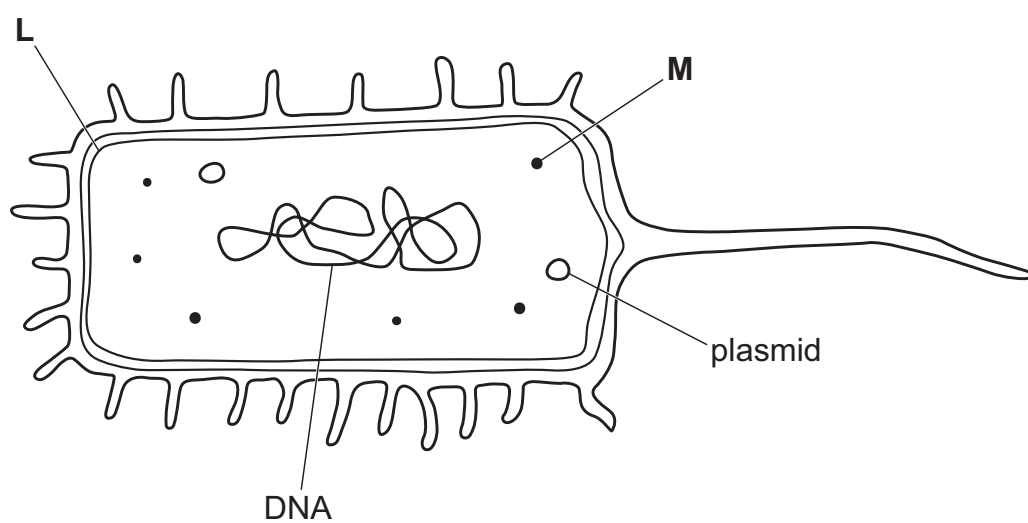


Fig. 3.2

(i) State the name of structures **L** and **M** shown in Fig. 3.2.

L
M [2]

(ii) Identify **two** features shown in Fig. 3.2 that are typical of prokaryotes.

1
 2 [2]

(iii) State the type of pathogen that causes cholera.

..... [1]

(iv) The scientific name for the pathogen that causes cholera is *Vibrio cholerae*.

State the genus name for this pathogen.

..... [1]

(v) Explain how the cholera pathogen causes dehydration of the human body.

.....

 [3]

(vi) Complete the sentences about the use of plasmids in genetic modification.

During genetic modification, human DNA and plasmid DNA are cut with a restriction enzyme. This creates which are joined together using an enzyme called The modified plasmid containing the human gene is called a plasmid.

[3]